



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/454,941	12/02/1999	DAVID B. KIRK	1391P	4446

7590 04/05/2006

Wagner Murabito & Hao LLP  
Two North Market Street  
Third Floor  
San Jose, CA 95113

EXAMINER
----------

KIM, HAROLD J

ART UNIT	PAPER NUMBER
----------	--------------

2181

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/454,941

Applicant(s)

KIRK, DAVID B.

Examiner

Harold Kim

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-28 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 02 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

FRITZ FLEMING  
PRIMARY EXAMINER  
GROUP 2100

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/23/05 has been entered.
2. This Office Action is in response to the filing of the Amendment, on 11/23/05, has been considered but they are not persuasive.
3. Claims 1-28 are presented for examination.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-3, 6, 9-13, 16-17, 20-21 and 25-26 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Dye, US Patent no. 6,173,381, in view of Davis et al., US Patent no. 4,991,169.**
5. In re claim 1, Dye shows a controller chip [fig 5] comprising:

Art Unit: 2181

a graphics engine [graphic engine, 140, 202, 204, 206, 210, 212, 214, 216, 221, 222 fig 5] operative to manage a memory [110, fig 2], the graphic engine comprising an integral interface [202, fig 5]; and

a storage element [230, fig 5] coupled to the graphic engine, the storage element being accessible by a central processing unit (CPU) [120 in fig 2; HOST in fig 2] through the graphic engine, wherein the graphic engine receives commands from the CPU via the integral interface, and manages the storage element via the integral interface, and write the commands into the memory.

Dye does not show the graphics engine incorporates the storage element as part of the memory. Davis et al. shows the storage section is part of the shared memory [col 4, lines 1-4]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the storage element as part of the memory as shown in Davis et al. for saving the cost of memory by utilizing system memory as the storage elements.

6. In re claim 2, Dye shows FIFO buffer [230, fig 5; stores instructions for the graphics engine, col 3, lines 10-13].

7. In re claims 3 and 6, Dye does show FIFO buffer [204, 206, 214, 216, fig 5]. Dye does not show circular buffer and the effective size of the FIFO buffer as view by the CPU can be as large as the memory. Davis et al show the circular buffer [col 4, lines 4] and the effective size of the FIFO buffer as view by the CPU can be as large as the memory [col 4, lines 1, "shared memory"]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the circular

Art Unit: 2181

buffer and the effective size of the FIFO buffer as view by the CPU can be as large as the memory as shown in Davis et al. for saving the cost of memory.

8. In re claim 9, Dye shows a graphics controllers chip [212, fig 5].

9. In re claim 10, Dye shows a graphics engine [212, fig 5].

10. Claims 11-13, 16, 17, 20, 21, 25-26 are rejected under the same rationale as discussed above in claims 1-3, 6, 9, and 10.

**11. Claims 4, 5, 7, 8, 14, 15, 18, 19, 22-24, 27, and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Dye, US Patent no. 6,173,381, in view of Davis et al., US Patent no. 4,991,169, as applied to claims 1, 2, 9, 10-12, 16-17, 20-21 and 25-26 above.**

12. In re claims 4, 5, 7 and 8, Dye does not explicitly show a circular FIFO buffer, a double buffer, a triple buffer, a checking mechanism. Official Notice is taken that both the concept and the advantages of providing for a circular FIFO buffer, a double buffer, a triple buffer, a checking mechanism are old and well known in the art. Therefore, it would have been obvious to the ordinary skilled person in the art at the time the invention was made to include the FIFO, circular FIFO buffer, double buffer, triple buffer, checking mechanism in Dye for more flexible device by allowing it to operate in multiple configurations and more reliable system by controlling and predicting data flow.

13. Claims 14-15, 18-19, 22-24, 27, and 28 are rejected under the same rationale as discussed above in claims 4, 5, 7 and 8.

***Response to Arguments***

Applicant's amendment with arguments, filed on 6/13/2005, has been fully considered but they are not persuasive.

In the remarks, applicants argued in substance that the claimed invention does not show a graphics engine comprising an integral interface, receiving commands from the CPU via the integral interface, and managing the storage element via the interface.

The rejection states as above that Dye shows "the graphics engine" [graphics engine, 140, 202, 204, 206, 210, 212, 214, 216, 221, 222 fig 5] comprising "an integral interface" [202, fig 5]. In other words, the integral interface [202] is part of the graphics engine [140, 202, 204, 206, 210, 212, 214, 216, 221, 222 fig 5].

Dye also shows the graphics engine receiving commands from the CPU [120 in fig 2; HOST in fig 5] via the integral interface [202 in fig 5] that is a part of the graphics engine.

Dye also shows the graphics engine managing the storage element [230 in fig 5] via the same integral interface [202 in fig 5].

As stated above, the graphics engine is comprising an integral interface [202], FIFO [204, 206, 214, 216], execution engine [210], graphics engine [212], and memory controllers [221, 222].

***Conclusion***

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this action should be mailed to:

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

The centralized fax number is 571-273-8300.

The centralized hand carry paper drop off location is:

U.S. Patent and Trademark Office  
Customer Service Window, Mail Stop \_\_\_\_\_  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application should be directed to the central telephone number (571) 272-2100.

Art Unit: 2181

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harold Kim whose telephone number is 571-272-4148. The examiner can normally be reached on Monday-Friday 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on 571-272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Harold J. Kim  
Patent Examiner  
April 2, 2006/HK

*Supanbory*

*Fritz Fleming*  
FRITZ FLEMING  
PRIMARY EXAMINER  
GROUP 2100  
AU2181

*4/3/2006*